Source Water Assessment Program (SWAP) Report For Setra Systems, Inc.

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared: January 26, 2001

Table 1: Public Water System (PWS) Information

PWS NAME	Setra Systems, Inc.
PWS Address	159 Swanson Road
City/Town	Boxborough
PWS ID Number	2037018
Local Contact	Deborah Bray
Phone Number	Number

Well Name	***Source ID#***	***Zone I (in feet)***	***IWPA (in feet)***	***Source Susceptibility***
Well #1	2037018-01G	158	454	High
Well #2	2037018-02G	183	479	High

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

Setra Systems, Inc. gets its water supply from two wells. Well #1 has a Zone I of 158 feet and an Interim Wellhead Protection Area (IWPA) of 454 feet, and Well #2 has a Zone 1 of 183 feet and an IWPA of 479 feet. The wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA.

The wells serving the facility have no treatment at this time. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by **the** water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.
Key issues include:

1. **Inappropriate Activities in Zone Is;**
2. **An Aboveground Storage Tank (AST) With diesel ;**
3. **Hazardous material storage and use;**
4. **Septic system within the IWPA;**
5. **Transportation corridor;**
6. **Floor drains; and**
7. **Very Small Quantity Hazardous Waste Generator.**

The overall ranking of susceptibility to contamination for the wells is High, based on the presence of at least one high threat land use or activity in the IWPAs, as seen in Table 2.

1. **Zone Is –** Currently, the wells do not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone Is contain buildings, parking areas, and driveway. The public water supplier does own and/or control all land encompassed by the Zone I. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

   Recommendations:
   - ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
   - ✓ Do not use fertilizers or road salt within the Zone I.
   - ✓ If the facility intends to continue utilizing the buildings, parking, and driveway in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.

2. **Aboveground Storage Tank (AST) –** There is an AST with diesel fuel located on a cracked concrete pad. If managed improperly, Aboveground Storage Tanks can be a potential contaminant source due to leaks or spills of the chemicals they store.

   Recommendations:
   - ✓ Aboveground storage tanks in your IWPA should be located on an impermeable surface, and also contained in an area large enough to hold 110% of the complete liquid volume, should a spill occur.

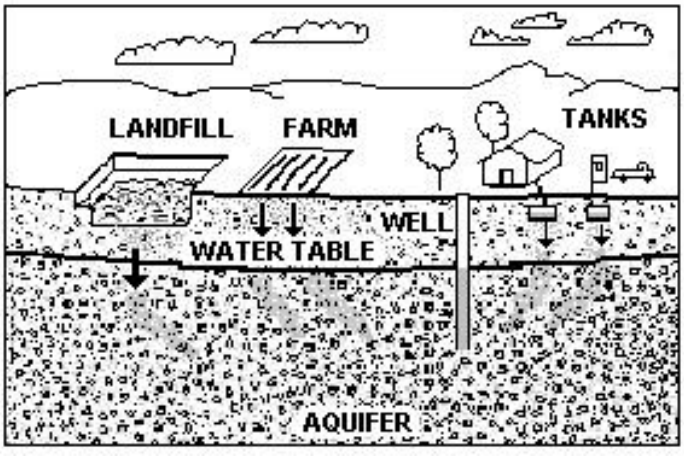

Figure 1: Example of how a well could become contaminated by different land uses and activities.

- ✓ Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices. Any modifications to the AST must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements. Consult with the local fire department for any additional local code requirements regarding ASTs.

3. **Hazardous materials storage and use** - As a result of the daily operations at the facility, paint, acetone and other solvents are stored at the site. They are stored in well-labeled containers, in a secure and properly labeled area within the IWPA.

   Recommendation:
   - ✓ Continue to use BMPs to ensure the proper handling and storage of hazardous materials.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Parking spaces, road	All wells	All wells	Moderate	Limit road salt usage and provide drainage away from wells
Aboveground Storage Tank	No	All wells	Moderate	Tank is on impervious surface
Hazardous materials storage & use	All wells	All wells	High	Materials in photographic, art, science, and vocational classrooms
Machine Shop	All wells	All wells	High	Use of cutting fluid and degreasers 125 feet from the wells.
Septic System	All wells	All wells	Moderate	See Septic System Brochure in the appendix
Transportation corridor	No	All wells	Moderate	Spills, leaks and road salt
Floor Drains	All wells	All wells	High	Two floor drains
Landscaping and lawn care	All wells	All wells	Moderate	Fertilizer and pesticide use
Very Small Quantity Hazardous Waste Generator	All wells	All wells	Low	Removed by licensed hauler

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x 5030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at: www.state.ma.us/dep/brp/dws/

Copies of this assessment have been provided to the public water supplier, town boards, the town library and the local media.

4. **Septic system –** The septic system for the facility is located within the IWPA. Septic systems can be a potential source of contamination if improperly managed. The system is about four years old, and the water systems operator indicates that the septic system is closely monitored.
   Recommendation:
   - ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.

5. **Transportation corridor -** Route 495 is located within the IWPA of the wells. Interstate highways are potential sources of contamination due to salting of roadways and leaks or spills of fuels and other hazardous materials during accidents.
   Recommendation:
   - ✓ Contact local fire department to ensure that the IWPA is included in Emergency Response Planning

6. **Floor drains -** Floor drains were observed in the first floor boiler room and the second floor mechanical room. The two drains are connected. Boiler compressor condensate from the second floor goes down the drain, to the first floor drain, which ultimately discharges into the septic system.
   Recommendations:
   - ✓ Boiler compressor condensate is considered industrial wastewater, and therefore cannot be discharged to the septic system. Contact the DEP Bureau of Waste Prevention in the Central Regional Office for further technical assistance.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

7. **Very Small Quantity Hazardous Waste Generator (VSQG) –** As a result of the daily operations at the site, small quantities of hazardous waste are generated. The waste is removed periodically by a licensed hauler.

8. **Storm Water drains/catch basins –** Several were observed on the premises. The town of Boxboro cleans the storm drains twice a year. If not cleaned, stormwater drains carry storm water from the roadway and adjacent properties to the ground. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential contaminants include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks,

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. Setra Systems should review and adopt the key recommendations above and the following:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Consider well relocation if Zone I threats cannot be mitigated.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices
- ✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials.
- ✓ Eliminate non-sanitary wastewater discharges to on-site septic systems. Instead, discharge drains to a tight tank or sanitary sewer.
- ✓ Bring the floor drain into compliance with DEP Regulations (refer to attachment "Industrial Floor Drain Brochure").
- ✓ Floor drains in areas where hazardous materials or wastes might reach them need to drain to a tight tank, be sealed, or be connected to a sanitary sewer.
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.

Planning:

- ✓ Work with local officials in Boxborough to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands.
- ✓ Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet
- Industrial Floor Drains Brochure
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form